

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A semiconductor structure comprising:

a monocrystalline substrate;

an amorphous intermediate layer in contact with the monocrystalline substrate;

a binary metal oxide material layer formed in contact with said amorphous intermediate layer; and

a monocrystalline material layer formed overlying said binary metal oxide material layer,

wherein said amorphous intermediate layer is formed by oxidation of said substrate during formation of said binary metal oxide material layer,

said binary metal oxide material layer is formed of at least one of BaO, SrO, MgO, CaO, ZrO₂, CeO₂, PrO₂, YSZ and an oxide blend comprising at least two of Ba, Sr, Mg, Ca, Zr, Ce, and Pr, and

wherein said substrate comprises a (001) semiconductor material having an orientation from about 2 degrees to about 6 degrees offset toward the (110) direction.

2. (Original) The semiconductor structure of claim 1, wherein said binary metal oxide layer is formed of a binary oxide material having a rock-salt crystalline structure.

3. (Original) The semiconductor structure of claim 1, further comprising a template layer formed overlying said binary metal oxide material layer and underlying said monocrystalline material layer.

4. (Original) The semiconductor structure of claim 1, wherein said substrate comprises silicon.

5. (Cancelled)

6. (Cancelled)

7. (Original) The semiconductor structure of claim 1, wherein said monocrystalline material layer comprises at least one of a semiconductor material, a compound semiconductor material, a metal, an oxide, and a non-metal.

Claims 8-15 (Cancelled)

16. (Original) The semiconductor structure of claim 1, wherein said monocrystalline substrate is characterized by a first lattice constant, said monocrystalline material layer is characterized by a second lattice constant that is different from said first lattice constant, and said binary metal oxide material layer is characterized by a third lattice constant that is different from said first and said second lattice constant.

17. (Original) The semiconductor structure of claim 2, wherein said substrate comprises silicon and said amorphous intermediate layer comprises a silicon oxide.

Claims 18-54 (Cancelled)